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(दूसरा पुनरीक्षण)

Indian Standard

INVENTORY MANAGEMENT —
GLOSSARY OF TERMS

(*Second Revision*)

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BUREAU OF INDIAN STANDARDS
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NEW DELHI 110002

FOREWORD

This Indian Standard (Second Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Management and Productivity Sectional Committee had been approved by the Management and Systems Division Council.

This standard was first published in 1983 and revised in 1992. This standard is now again revised to modify/ incorporate the terms and definitions in line with the latest development and changes in this field. The scope of this standard has also been widened to make it more broad-based by including the aspects of inventory management.

Organizations in developing economies generally tend to have excessive inventories at all stages, namely, finished goods, goods in transit, in-process inventories, pre-use inventories, and inventories awaiting disposal being surplus/ obsolete. Inventory management is a function of materials management which helps in optimizing stocks consistent with requirements.

This standard is intended to minimize confusion by rationalizing existing terms and their meanings.

The Committee responsible for the formulation of this standard is given in Annex A.

Indian Standard

INVENTORY MANAGEMENT —

GLOSSARY OF TERMS

(Second Revision)

1 SCOPE

This standard gives definitions of terms relating to inventory management.

2 BASIC TERMS

2.1 Inventory

Assets at a give point of time,

- a) in the form of materials or supplies (including in transit) to be consumed in the production process or in the rendering of services;
- b) in the work-in-progress; or
- c) held for sale in the ordinary course of business.

NOTE — It is generally measured in terms of days of consumption. It is also measured in absolute terms of money value.

2.2 Inventory Management

The aspect of the overall management function with the purpose of getting the right inventory in the right place at the right time in the right quantity in the right form at the right cost.

2.3 Inventory Planning

To pre-determine the required inventory to meet the object/activity.

NOTE — The effective inventory planning is instrumental in reducing costs and increasing productivity while coordinating inventory with production or sales needs.

2.4 Inventory Control

A functional activity the objective of which is to minimize the total costs of maintaining inventories and of acquiring these in order to render the stipulated level of service.

2.5 Inventory Policy

A definitive statement enumerating when to procure and how much to procure, usually to ensure optimal cost in tune with organizational objectives and to meet desired customer service levels.

3 INVENTORY CLASSIFICATION/INVENTORY CATEGORY/INVENTORY TYPES

3.1 Raw Materials

Materials for processing/conversion into finished goods.

3.2 Bought-Out Components

Items not manufactured/fabricated by the organization but used

with or without further processing and/or packing in the finished product.

3.3 Finished Goods

The complete units and the assemblies carried in stock ready for delivery to customers or for transfer to other plants or for own use.

3.4 Inventory in Transit

Inventory that has left the premises of the supplier and till it reaches the buyer.

3.5 Negative Inventory

An inventory system condition whereby the on-hand inventory balance is listed as a quantity less than zero.

3.6 Quantity Allocated

It is the quantity that is on current open sales orders or production orders (as components), and may be relative to specific time period.

3.7 Quantity Available

It is the result of a calculation that takes quantity on hand and reduces it by allocations.

3.8 Pool Inventory

An inventory managed on behalf of more than one organization. Any constituent of these organizations can have access to this inventory at given point of time.

3.9 Stores and Spares

3.9.1 Consumables

Materials which are consumed in the process of manufacturing/operations/maintenance, and lose their identity in the process and as such do not form distinct part of finished goods.

NOTE — Example, coolants, oil, greases, lubricants, solders/fluxes, etc. In case of equipment, consumables are those materials used in the equipment which need regular replacement due to material losing either its identity or life, for example, washers, filters, toners, developers, etc.

3.9.2 Expense Items

Frequently used items of small unit value and also small aggregate consumption value.

NOTE — Generally very limited control is called for issue of such items, for example, hand gloves, dusters, etc.

3.9.3 Insurance Spares

Spares of items of prohibitive high stock-out costs but likely to be rarely required during the normal working life of the machine, equipment, assembly or any other thing of which the spare forms a part.

3.9.4 Spares — An item or a sub-assembly or component thereof, kept or carried in reserve of an item to meet scheduled or unscheduled maintenance, repair and overall needs, for example, crank shaft, stepany, etc.

3.10 Vendor Managed Inventory/Consignment Stock — Inventory where a supplier responsible for ensuring that stock is maintained at appropriate levels in the supplier/purchaser facility and for replenishing items when these levels drop.

3.11 Work-in-Progress — Materials, components or products at various stages in the manufacturing process, including items issued for processing and manufactured items awaiting final inspection and acceptance such as finished products.

4 INVENTORY ANALYSIS

4.1 A B C Analysis — The technique used to classify items into three classes namely, A, B and C based on annual usage value. Class A normally covers about 10 percent of the items with highest annual usage value which in aggregate generally account for over 70 percent of the total annual usage value of all items. Class C covers about 70 percent of the items which account for up to 10 percent with lowest annual usage value. The remaining about 20 percent items are classified as Class B.

4.2 F S N Analysis — The technique used to classify items into three classes in the descending order of their frequency of issue from stores in terms of the number of transactions made per unit time. Here, F stands for fast moving, S for slow moving, and N for non-moving items.

NOTES

1 Non-moving items — Those items which have not moved at all during a specified period, depending upon the type of industry.

2 Slow moving items — Those items whose inventory holding is more than the expected consumption during the same specified period, depending upon the type of industry.

3 Fast moving — Items other than those explained above are termed fast moving.

4.3 H M L Analysis — The technique used to classify items into three classes in the descending order of their unit cost. Here, H stands for high, M for medium, and L for low unit cost items.

4.4 S D E Analysis — The technique used to classify items into three classes in the descending order of 'ease of availability' with which supplies can be obtained. Here, S stands for scarce, D stands far difficult, and E stands for easily available items.

4.5 V E D Analysis — The technique used to classify items into three classes in the descending order of their

criticality for the organizations, performance as a whole. The criticality may be either technical or environmental. Here, V stands for vital items in the absence of which the stock out costs would be very high, E for essential, and D for desirable items.

4.6 X Y Z Analysis — The technique similar to ABC analysis, but the basis is actual stock position at the time of analysis. If the stock values are very high, they are classified as X-class (over 70 percent of stock value) and need special efforts to reduce the inventory level. Y-class and Z-class items have medium stock and low stock values respectively.

5 INVENTORY PLANNING

5.1 Bill of Material — Lists of materials (components or ingredients) required to produce an item.

5.2 Blanket Order — A type of purchase order that commits to purchase a specific quantity over a specific period of time, but does not necessarily provide specific dates for shipments.

5.3 Lead Time (LT) — The actual or expected time between initiation and fulfillment of an indent. The LT consists of several sub-LTs, such as suppliers/manufacturing LT, transportation LT, administrative LT. Some of the sub-LTs constitute the external LTs and some constitute the internal LT.

5.4 Maximum Stock Potential/Maximum Level — The maximum stock which can be held for a particular period based on monthly consumption, interval period between two reviews of indents and the time taken between initiation and fulfillment of an indent. It may be calculated as per formula given below:

$$\text{Time period between two reviews} + \text{lead time} \\ \times \text{consumption in unit time}$$

NOTE — Above time period and lead time are to be in the same unit as that of consumption.

5.5 Minimum Level/Safety Stock/Buffer Stock — The inventory kept to provide protection against the fluctuations in demand and in lead time or fulfilling cycle time. Buffer stock is a synonym for safety stock. Sometimes it is also called minimum level. In case the demand remains almost steady the safety stock may be calculated as:

$$\text{Safety stock} = R(L - l)$$

where

R = rate of consumption,

L = maximum lead time, and

l = normal lead time.

NOTE — There are other statistical formulae which may be used, if wide uncertainty both in demand and lead time is predicted.

5.6 Re-ordering Level — The sum of the safety stock and the consumption during normal lead time. It represents the stock level at which action is initiated to re-order the item.

5.7 Re-ordering Level System — In this case, an order is placed for the quantity equal to the economic order quantity as soon as the stock level reaches re-ordering level. This is also sometimes called fixed order system.

6 REPLENISHMENT SYSTEMS

6.1 Annual Usage — Number of units of an item consumed during the accounting year. This term is also used to denote the value of such usage.

6.2 Average Inventory — Average inventory is calculated on a periodic basis by adding beginning inventory to ending inventory and dividing by two.

6.3 Backorder — A specific quantity of a specific item that could not be filled on the requested date.

6.4 Consumption Rate — Actual consumption of an item per unit of time.

6.5 Cannibalization — The process of breaking down a higher assembly into its sub-assemblies/parts.

NOTE — This is resorted to when the sub-assemblies/parts are required frequently and the higher assembly is either surplus or slow moving or non-moving or obsolete.

6.6 Economic Order Quantity (EOQ) — The quantity of a product which should be ordered at one time so as to minimize the sum of ordering costs and inventory carrying costs. The EOQ may be calculated from the following equation:

$$EOQ = \frac{\sqrt{2AS}}{CI}$$

where

A = annual consumption in units,

S = ordering cost in rupees per order,

I = inventory carrying cost as a fraction of the average inventory, and

C = unit cost.

6.7 Inventory Carrying Cost — The cost of holding inventories. This is usually represented as a percentage.

NOTE — The major constituents are the costs of capital locked up in form of inventories, preservation, deterioration, obsolescence, space, personnel, insurance, security and other related costs.

6.8 Ordering Cost — The administrative cost incurred in placement of a purchase order from the time demand is received in the purchase department to the time the items are ordered. It is expressed as rupees per order. This also includes all follow-up costs till the material is received in stores.

6.9 Periodic Review System — Under this system, certain number of items is reviewed for ordering at fixed intervals called review period. This is also called 'P' system. It is calculated as:

$$\text{Optimum review period} = \frac{\sqrt{288S}}{ACI} \text{ months}$$

6.9.1 Periodic Review System with Variable Order Quantity — Under this system, an order of quantity equal to the difference between the maximum level and the quantity at hand is placed at the time of review.

6.9.2 Periodic Review System with Fixed Order Quantity — Under this system, an order equal to a fixed quantity, that is, EOQ is placed at the time of review if the quantity at hand is below the reordering limit. If the quantity at hand is above the reordering limit, no order is placed.

$$\begin{aligned} \text{Reordering limit} &= \text{Safety stock} + \text{Consumption} \\ &\quad \text{during lead time} + \text{Consumption during half} \\ &\quad \text{review period} \end{aligned}$$

6.10 Stock Out — Non-availability of materials or products at a point of time when it is required.

6.11 Stock Out Cost — The total costs due to non-availability of a particular material or product when needed.

NOTE — In the case of finished goods, this includes customers, goodwill and/or the net profit lost. Stock-outs of in-process and the pre-use materials may result in stock-outs of the finished goods besides the costs of under-utilized capacity.

6.12 Two-Bin System — A type of reorder level system in which inventory is carried in two bins, one is called service bin and the other one is called working bin. A replenishment quantity is ordered when the working bin is empty. When the supply is received the service bin is refilled first and the excess is put into the working bin. This term is also sometimes used to describe any fixed order system even when physical 'bins' do not exist. This method is usually adopted for low annual usage value (AUV) items.

NOTE — This is also referred as *Min-Max* system.

6.13 Standard Pack Quantity (SPQ) — It is a packing which is not further split for the purpose of supply by the vendor.

6.14 Minimum Order Quantity (MOQ) — Vendors also specify certain minimum quantity below which the order is not accepted.

NOTE — This is more relevant in case of low cost items.

6.15 Minimum Order Value (MOV) — It is the minimum amount of the order below which the vendor does not accept the order.

6.16 Minimum Line Value (MLV) — It is the value of the individual items below which the order is not accepted.

7 STORES PRICING SYSTEMS

7.1 Automated Storage and Retrieval Systems (ASRS) — A system of rows of rack, each row having a dedicated retrieval unit that moves vertically and horizontally along the rack picking and putting away loads.

7.2 FIFO (First-In First-Out) — In this method, the costs of material are transferred to the item in chronological order of receipt.

7.3 LIFO (Last-In First-Out) — In this method, the costs of material are transferred to the item in reverse chronological order of receipt.

7.4 Standard Pricing System — A method of valuation by which items are priced at a pre-determined standard rate for a pre-determined period.

7.5 Weighted Average Method — This method consists of re-calculating an average price each time a new consignment is received at a new price.

8 OTHER TERMS

8.1 Bin Card — It is perpetual inventory record card which reflects a continuous account of the incoming material, outgoing material and the balance on hand.

8.2 Bonded Warehouse — A facility or a dedicated portion of a facility where imported goods are stored prior to custom duties and taxes being paid.

NOTE — This can be particularly useful when products are received well in advance of sale or when a portion of the product received may eventually be returned or scrapped (thus preventing paying import fees on items not sold).

8.3 Catalogue — A systematic list of items providing part number, description, price, and code number, etc.

8.4 Codification — A form of identification assign to the items by a alpha and/or numeric code for their complete identification and providing similarity with other products.

8.5 Goods Received and Acceptance Note (GRAN) — A document acknowledging receipt and acceptance thereof.

8.6 Indent — A prescribed form describing the indentors requirements for procurement (see also **8.18**).

8.7 Indentor — The person, department or organization that raises the indent.

8.8 Inventory Turn-Over Ratio — The cost of sales/consumption turn-over divided by the average inventory.

NOTE — It could also be expressed in terms of month, year, days, etc, as the case may be.

8.9 Just-in-Time (JIT) — JIT is an integrated system of managing the flow of material in such a manner that these reach the user at the time of use.

8.10 Kanban — It is the used as part of a just-in-time production operation where components and sub-assemblies are produced based upon notification of demand from a subsequent operation.

NOTE — Typically, kanban has been a physical notification such as, a card (kanban cards) or even an empty hopper sent up the line to the previous operation. Kanban is actually a simplistic means of both signalling the need for invention as well as controlling the inventory levels (by limiting kanban cards or containers).

8.11 Material Requirement Planning — It is a technique which uses the bill of material to develop a plan for components or materials needed to support the master schedule for products/services.

8.12 Obsolete Inventory — The inventory which has lost its usefulness or worth to the current possessor as a result of changing over to different and/or more economical products, or change in technology.

8.13 Radio Frequency Identification Device (RFID) — It refers to devices attached to an object that transmit data to an RFID receiver.

NOTE — RFID has advantages over barcodes such as, the ability to hold more data, the ability to change the stored data as processing occurs, does not require line-of-site to transfer data and is very effective in harsh environments where barcode labels won't work.

8.14 Seasonal Demand — Demand in season at a time.

8.15 Shelf Life — The expected period of time during which an item when stored in the specified manner will retain its quality/performance.

8.16 Stock Taking — A process of physically verifying inventory in order to check whether the actual quantities tally with the documented figures. This is also called stock verification.

8.16.1 Perpetual Stock Verification — The stock verification wherein inventory is checked at the time of transaction.

NOTE — Normally, it may be done when an item reaches its reorder level, new stock is received or issued.

8.16.2 Periodic Stock Verification — The stock verification wherein inventory is checked periodically. The periodicity is determined on the class/nature of the item.

8.16.3 Annual Stock Taking — The stock verification wherein inventory is checked once in a year. Normally it is taken at the end of the financial year.

8.17 Stock Verification Report (SVR) — A report filled in by the stock verifiers at the time of stock taking. It indicates variations, if any, between the physical stock and the ledger record.

8.18 Stores Requisition — Authorization usually in a prescribed form to the stores for issue of material.

8.19 Stores — A place designated for safe storage of inventories.

8.19.1 Raw Material Store — A place designated for safe storage of raw material inventory.

8.19.2 Work-in-Progress Store — A place designated for safe storage of in-process goods inventory.

8.19.3 Finished Goods Store — A place designated for safe storage of finished goods inventory.

8.19.4 Quarantine Stores — A place designated for safe storage of inventories of disputed items.

8.20 Surplus Inventory — When the quantity of an item in stock is more than the updated pre-determined maximum level, the excess holding is surplus inventory.

ANNEX A
(Foreword)
COMMITTEE COMPOSITION

Management and Productivity Sectional Committee, MSD 4

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